

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Currently Amended): An evacuation apparatus comprising:

a ~~first-vacuum~~ booster pump to be connected to a vacuum chamber, said booster pump
having a pair of multistage Roots-type pump rotors; and

a ~~second-vacuum~~ main pump connected to said first-vacuum booster pump, said main
pump having a pair of multistage pump rotors;

~~wherein said first vacuum pump has a pair of multistage pump rotors; and~~

~~wherein said first vacuum serves as a booster pump for increasing a pumping speed of~~
~~said second vacuum pump serving as a main pump~~

wherein said main pump is arranged downstream of said booster pump, and

wherein said booster pump has a pumping speed high enough to increase a pumping
speed of said main pump.

2. (Currently Amended): An evacuation apparatus according to claim 1, wherein each of
said multistage Roots-type pump rotors has an inlet-side rotor and an outlet-side rotor, and an
axial width of said inlet-side rotor is larger than an axial width of said outlet-side rotor.

3. (Currently Amended): An evacuation apparatus according to claim 1, wherein said
~~first-vacuum~~ booster pump is started after said ~~second-vacuum~~ main pump is started.

4. (Currently Amended): An evacuation apparatus according to claim 1, wherein a rotational speed of said multistage Roots-type pump rotors is controlled based on a temperature of a gas delivered by said evacuation apparatus, a pressure of the gas, a temperature of a rotor casing for housing said multistage Roots-type pump rotors, or electric current flowing into a motor for rotating said Roots-type multistage pump rotors.

5. (Currently Amended): An evacuating apparatus according to claim 1, wherein said ~~first vacuum~~ booster pump and said ~~second vacuum~~ main pump are accommodated in a single enclosure.

6. (Currently Amended): An evacuation apparatus according to claim 1, wherein said ~~second vacuum~~ main pump ~~comprises~~ includes a brushless DC motor.

7. (Withdrawn): A method of operating an evacuation apparatus having a booster pump connected to a vacuum chamber and a main pump connected to the booster pump, the booster pump having a pair of multistage pump rotors, said method comprising:

starting the main pump;

operating the main pump at a rated rotational speed;

starting the booster pump after a predetermined period of time has passed from said starting the main pump;

operating the booster pump at a constant rotational speed; and
when a pressure of a gas in the vacuum chamber is lowered to a predetermined pressure,
increasing the rotational speed of the booster pump.

8. (New): An evacuation apparatus according to claim 1, wherein said multistage Roots-type pump rotors comprises two-stage Roots-type pump rotors each having an inlet-side rotor and an outlet-side rotor, and a ratio of an axial width of said inlet-side rotor to an axial width of said outlet-side rotor is in a range of 2:1 to 10:1.

9. (New): An evacuation apparatus according to claim 8, wherein the ratio is in a range of 5:1 to 10:1.